CLAIMS

1. Nucleotide sequence coding for a polypeptide involved in the biosynthesis of streptogramins.

2. Nucleotide sequence according to Claim 1 characterized in that it is chosen from:

(a) all or part of the snaA (SEQ ID no. 2), snaB (SEQ ID no. 3), snaC (SEQ ID no. 7), snaD (SED ID no. 8), papA (SEQ ID no. 9), papM (SEQ ID no. 10), samS (SEQ ID no. 4), snbA (SEQ ID no. 5), snbC (SEQ ID nos. 11 and 12), snbD (SEQ ID nos. 13 and 14), snbE (SEQ ID nos. 15 and 16) and snbR (SEQ ID no. 6) genes,

(b) the sequences adjacent to the genes (a) constituting the biosynthesis clusters and coding for the polypeptides involved in the biosynthesis of streptogramins,

(c) the sequences which hybridize with all or part of the genes (a) or (b) and which code for a polypeptide involved in the biosynthesis of streptogramins, and

(d) the sequences derived from the sequences (a), (b) and (c) owing to the degeneracy of the genetic code.

3. Nucleotide sequence according to claim 2, characterized in that it is chosen from the snaA, snaB, snaC, snaD, papA, papM, samS, snbA, snbC, snbD, snbE and snbR genes.

4. Recombinant DNA comprising a gene for

the biosynthesis of streptogramins.

5. Recombinant DNA according to claim 4, characterized in that it comprises all or part of cosmids pIBV1, pIBV2, pIBV3 or pIBV4 as shown in Figures 4 to 7, or all or part of sequences which hybridize with cosmids pIBV1 to pIBV2 or with fragments of these latter.

6. Autonomously replicating and/or integrative expression vector, characterized in that it comprises a nucleotide sequence according to one of claims 1 to 3 or a recombinant DNA according to one of claims 4 and 5.

7. Vector according to claim 6, characterized in that it is chosen from cosmid pIBV1 (Figure 4), cosmid pIBV2 (Figure 5), cosmid pIBV3 (Figure 6), cosmid pIBV4 (Figure 7), plasmid pVRC402 (Figure 15(A)), plasmid pVRC501 (Figure 8(B)), plasmid pXL2045 (Figure 9), and plasmids pVRC1105, pVRC1106, pVRC1104, pVRC900, pVRC1000, pVRC509, pVRC903, pVRC409, pVRC505, pVRC701, pVRC702, pVRC508, pVRC404, pVRC507 and pVRC706 shown, respectively, in Figures 17 to 31.

8. Recombinant cell containing a nucleotide sequence and/or a recombinant DNA and/or an expression vector according to one of claims 1 to 7.

9. Method for producing a polypeptide involved in the biosynthesis of streptogramins, characterized in that a recombinant cell according to claim 8 is cultured and the polypeptide produced is

recovered.

10. Use of a recombinant cell according to claim 8, expressing at least one polypeptide involved in the biosynthesis of streptogramins, in a bioconversion reaction.

11. Use of a nucleotide sequence according to one of claims 1 to 5 for amplifying streptogramin production.

12. Method for producing streptogramins, characterized in that:

- one or more sequences and/or vectors according to one of claims 1 to 7 is/are introduced and/or amplified in a cell producing streptogramins or which is potentially a producer of streptogramins,

- the said cell is cultured under conditions of streptogramin production, and

- the streptogramins produced are recovered.

13. Method according to claim 12, for producing pristinamycins, mikamycins or virginiamycins.

14. Method for preparing cells blocked in a step of the pathway of biosynthesis of streptogramins, characterized in that a mutagenesis is performed on at least one gene of the biosynthesis pathway, on a cell producing streptogramin.

15. Method according to claim 14, characterized in that the mutagenesis is performed <u>in vitro</u> or <u>in situ</u>, by suppression, substitution, deletion and/or addition of one or more bases in the

gene in question, or by gene disruption.

16. Mutant of a microorganism producing streptogramins, characterized in that it possesses at least one genetic modification in a gene involved in the biosynthesis of streptogramins.

17. Method for preparing an intermediate of the biosynthesis of streptogramins, characterized in that:

- a cell blocked in a step of the pathway of biosynthesis of streptogramins is prepared according to claim 14,

- the said cell is cultured, and

- the accumulated intermediate is recovered.

18. Method for preparing a molecule derived from streptogramins, characterized in that:

- a cell blocked in a step of the pathway of biosynthesis of streptogramins is prepared according to claim 14,

- the said cell is cultured, and

- the intermediate accumulated by this cell is modified, where appropriate after separation from the culture medium.

19. Method for preparing streptogramins, comprising the culturing of a cell according to claim 16 containing, in addition, a nucleotide sequence and/or a recombinant DNA and/or an expression vector according to one of claims 1 to 7.

20. Use of a sequence and/or a vector

according to one of claims 1 to 7 for the preparation of hybrid antibiotics.

21. Polypeptide resulting from the expression of a sequence according to one of claims 1 to 5.

22. Polypeptide comprising all or part of the polypeptides SnaA (SEQ ID no. 2), SnaB (SEQ ID no. 3), SnaC (SEQ ID no. 7), SnaD (SEQ ID no. 8), PapA (SEQ ID no. 9), PapM (SEQ ID no. 10), SamS (SEQ ID no. 4), SnbA (SEQ ID no. 5), SnbC (SEQ ID nos. 11 and 12), SnbD (SEQ ID nos. 13 and 14), SnbE (SEQ ID nos. 15 and 16) and SnbR (SEQ ID no. 6) or of derivatives of these.